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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,036	05/06/2005	Michael Heckmeier	MERCK-3005	9696

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MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER	
TRA, TUYEN Q	
ART UNIT	PAPER NUMBER
2873	

MAIL DATE	DELIVERY MODE
04/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,036	HECKMEIER ET AL.	
	Examiner	Art Unit	
	TUYEN Q. TRA	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *0505*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Detailed Action*.

DETAILED ACTION

Oath/Declaration

1. The declaration filed 05/06/2005 is acceptable.

Drawings

2. The drawings filed 05/06/2005 in this application are accepted.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 05/06/2005 being considered by the examiner.

Claim Objections

4. Claim 1 is objected to because of the following informalities: claim 1, lines 10 and 13, recites "the mesogentic modulation medium", "the mesogenic modulation layer" that have not been mentioned previously. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim 6 recites "the solid dielectric layer the electrode structure". Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 8-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (US Patent 6,266,109).

With respect to claim 1, Yamaguchi et al. discloses a substrate (figure 1A, item 51), an electrode arrangement (figure 1A, item 53/54), a element (figure 3, item 3) for polarisation of the light and a modulation medium (figure 1A, item 58), characterised in that the light modulation element is operated at a temperature at which the modulation medium is in the optically isotropic phase in the unaddressed state, and in that the electrode arrangement can generate an electric field having a significant component parallel to the surface of the mesogenic modulation medium, and in that the light modulation element includes a solid dielectric layer (col. 11, lines 47-48) between the electrode arrangement (53/54) and the mesogenic modulation layer (col. 11, line 28 – col. 12, lines 8; col. 12, lines 46-59).

With respect to claim 2, Yamaguchi et al. further discloses wherein the solid dielectric layer consists of SiO_2, SiOX, silicon nitride or silicon carbide (col. 11, lines 47-57).

With respect to claims 3-5, Yamaguchi et al. further disclose wherein the solid dielectric layer covers at least part of the electrode structure; the solid dielectric layer essentially completely covers the corners and/or edges of the electrode structure; the solid dielectric layer essentially completely covers the electrode structure (col. 11, lines 47-57).

With respect to claim 6, Yamaguchi et al. further discloses wherein the solid dielectric layer (the insulating thin film) has a thickness of less than 90% of the layer thickness of the mesogenic modulation layer (58).

With respect to claims 8 and 10, Yamaguchi et al. further discloses wherein electro-optical light modulation element is an electro-optical display system.

With respect to claims 11-13, Yamaguchi et al. further discloses wherein electro-optical element can be used as a television screen or a computer monitor or for the display of information (col. 1, lines 9-12).

With respect to claims 14 and 15, Yamaguchi et al. further discloses wherein the electro-optical element is used for the display of video signals or digital signals.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (US Patent 6,266,109), as applied to claim 8, in view of Heppke et al. (US Patent 4,818,076).

Yamaguchi et al. discloses a substrate (figure 1A, item 51), an electrode arrangement (figure 1A, item 53/54), a element (figure 3, item 3) for polarisation of the light and a modulation medium (figure 1A, item 58), characterised in that the light modulation element is operated at a temperature at which the modulation medium is in the optically isotropic phase in the unaddressed state, and in that the electrode arrangement can generate an electric field having a significant component parallel to the surface of the mesogenic modulation medium, and in that the light modulation element includes a solid dielectric layer (col. 11, lines 47-48) between the

electrode arrangement (53/54) and the mesogenic modulation layer (col. 11, line 28 – col. 12, lines 8; col. 12, lines 46-59). However, Yamaguchi et al. does not disclose the modulation medium is in a blue phase at the operating temperature of the light modulation element. Within the same field of endeavor, Heppke et al. teaches the modulation medium is operating in blue phase (col. 7, lines 43-45).

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the electro-optical display apparatus with such as disclosed by Yamaguchi et al., and with the modulation medium is in a blue phase such as discloses by Heppke et al., for purpose of displaying.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (US Patent 6,266,109), as applied to claim 8, in view of Noguchi et al. (US Patent 7,084,849).

Yamaguchi et al. discloses a substrate (figure 1A, item 51), an electrode arrangement (figure 1A, item 53/54), a element (figure 3, item 3) for polarisation of the light and a modulation medium (figure 1A, item 58), characterised in that the light modulation element is operated at a temperature at which the modulation medium is in the optically isotropic phase in the unaddressed state, and in that the electrode arrangement can generate an electric field having a significant component parallel to the surface of the mesogenic modulation medium, and in that the light modulation element includes a solid dielectric layer (col. 11, lines 47-48) between the electrode arrangement (53/54) and the mesogenic modulation layer (col. 11, line 28 – col. 12, lines 8; col. 12, lines 46-59). However, Yamaguchi et al. does not disclose the display is

addressed by means of an active matrix. Noguchi et al. teaches the display is addressed by means of an active matrix (see figure 2).

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the electro-optical display apparatus with such as disclosed by Yamaguchi et al., and with the display addressed by means of an active matrix such as discloses by Noguchi et al., for purpose of individually control light modulation elements.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Q. Tra whose telephone number is 571-272-2343. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L. Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT

March 26, 2008

/Ricky L. Mack/
Supervisory Patent Examiner, Art Unit 2873